UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR - 9 2011

REPLY TO THE ATTENTION OF:
WW-16J

Mr. James M. Townsend, Chief, Regulatory Branch
U.S. Army Corps of Engineers, Louisville District
P.O. Box 489
Newburgh, Indiana 47629-0489

Subject: Public Notice LRL-2008-1304; Solar Sources, Charger Surface and Underground Coal Mine

Dear Mr. Townsend:

The U.S. Environmental Protection Agency has reviewed Solar Sources' response to our October 20, 2009 comments regarding the subject Public Notice issued September 24, 2009. The applicant continues to propose impacts to 27,989 linear feet of ephemeral and intermittent streams and 1.4 acres of wetlands. They are also requesting after-the-fact (ATF) authorization for unpermitted impacts to 35,085 linear feet of stream and 7.0 acres of wetland by another mining company that were completed in the early 2000's. The previous mining activities were put into temporary cessation as the company went into bankruptcy proceedings. The unreclaimed land was eventually sold as part of the bankruptcy filings. Solar Sources purchased the property in January 2006 with the intention to restart mining operations. Before purchasing the property, Solar Sources met with the Corps and it was decided that Solar Sources would provide compensation for prior unauthorized impacts. The applicant proposes to provide a total of 46,604 linear feet of stream and 10.1 acres of forested wetland as mitigation for both prior unauthorized impacts and proposed impacts. EPA offers the following comments based on our review of their revised application and their response to previous comments provided by EPA.

Avoidance and Minimization

Our initial comment letter stated that efforts to avoid and minimize impacts to existing wetlands and streams for the preferred alternative were inadequate. After a review of the revised application, EPA has determined that Solar Sources' still has not demonstrated that impacts to the newly proposed area have been avoided and minimized to the maximum extent practicable. Specifically, they should avoid and minimize impacts to aquatic resources for non-extractive activities (e.g. alternative locations, size or configuration of sediment basins, haul roads, soil stockpiles, refuse disposal, diversions and drainage, and attendant features proposed to cause direct impacts to streams and wetlands on site). Table 2 within the Mitigation Plan (existing conditions to be disturbed) reveals no efforts to minimize newly proposed impacts to aquatic resources onsite. Stream impacts proposed in the revised application have not changed from the original application. The major change in the revised application is that the applicant proposes to

provide more compensatory mitigation for streams onsite. The mining operations map depicts the placement, sizing and configuration of surface support facilities; however, the map doesn't include the existing streams and wetlands onsite. As such, it is difficult to determine avoidance and minimization. For example, the operations map fails to adequately illustrate the proposed impacts to streams located in the northernmost area of the permit boundary (i.e. 1NS2-1, 1NS1, 1NS1A, 1NS1A2, 1NS1A2A, 1NS1A-2, 1NS1A1, 1NS1A3 and associated wetlands in that area) and wetlands and streams in the southwesternmost area of the permit boundary (i.e. 4NS1, 4NS-1, 4NS1-1, 4NS1A, 4NS1C-1, 4NS1A1, 6NS4A, 6NS4, 6NW13, and 6NW10). Furthermore, the operations map appears to indicate the placement of soils (non-prime, prime subsoil and prime topsoil) within aquatic resources in the southwestern area of the permit boundary (i.e. 4NS1B, 4NS1B-1, and 4RW1). These features should not be placed in streams or wetlands when an upland alternative is available. As we have mentioned in reviewing previous projects, if there are available upland alternatives, the applicant should relocate these features out of aquatic resources. Solar Sources needs to better describe how aquatic resources in the undisturbed areas are to be avoided or the impacts minimized. We suggest that this information be summarized in a table which identifies the current or proposed impact to each water body (ex. mine-through, haul road crossing, pond construction, etc.). EPA recommends the applicant provide this information to assist the Agencies in effectively evaluating the proposed avoidance and minimization efforts and compensation for unavoidable impacts required under the 404(b)(1) Guidelines.

Mitigation

Mitigation is proposed onsite and will be initiated during various stages throughout the mining process. The applicant proposes to mitigate for 10,820 linear feet of stream (23% of total impact) immediately upon 404 permit authorization. Approximately 19,336 linear feet (41% of total impact) will be completed in a step-wise process, as areas are reclaimed over the 10-year duration of the surface mining operations. The remaining 16,448 linear feet (36% of total impact) will be constructed after underground operations have been completed and reclaimed, which is currently estimated to take 25 years. Additionally, the applicant has agreed to provide a 50-ft wide riparian buffer along each side of 950 linear feet of the receiving waters of Flat Creek as requested by the US Fish and Wildlife Service.

The Guidelines state that a minimum one-to-one acreage or linear foot compensation ratio must be used if a functional or condition assessment or other suitable metric is not used.[1] The current assessment of streams onsite is based on physical (EPA Rapid Bioassessment Protocol (RBP)), chemical (temperature, conductivity, total dissolved solids, (TDS), and pH), and biological (EPA RBP, Indiana fIBI and mIBI) evaluations; however this only represents a small percentage of intermittent streams onsite. Of the three sample points selected, two are within a few hundred feet of one another and, because of this, only two of the three sites were sampled for fish. This does not constitute a full functional analysis of the ecological functions and values of all streams onsite.

The applicant proposes to mitigate intermittent streams at a ratio of 1:1 and ephemeral streams at a 0.5:1 ratio. Approximately 19,395 linear feet of ephemeral stream will not be

[1] 40 C.F.R. § 230.93(f)

replaced, nor does the mitigation plan identify how the company will make up for this shortage in ephemeral stream linear footage. EPA advises the applicant to seek additional stream mitigation opportunities to replace the aquatic functions and values that would be lost as a result of this project. Depending on the site, it may not always be possible to rely solely on linear feet for replacing ephemeral or intermittent channels in the modified post-mining landscape at a 1:1 ratio. If this is the case, the company should provide justification for not replacing all streams onsite, address the proposed shortages in linear footage or stream function, and complete the required compensatory stream mitigation offsite.

Additional stream length has been proposed to offset the temporal loss associated with the underground mining operation. The applicant proposes to compensate for the temporal loss incurred on 44,356 linear feet of stream mitigation with an additional 2,248 linear feet of stream reconstruction both onsite and offsite (adjacent and connected to the project area). EPA believes the proposal does not adequately address temporal loss. Higher ratios are required to compensate for the temporal loss anticipated by this project. According to the Guidelines, "The district engineer must require a mitigation ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site. The rationale for the required replacement ratio must be documented in the administrative record for the permit action".[2] EPA recommends the Corps continue to work with the applicant to develop a mitigation plan which addresses the temporal loss to aquatic resources due to both surface and underground mining. EPA requests the applicant explore mitigation opportunities within the impacted watersheds specified in the Cumulative Impacts Analysis, Lick Creek, Sugar Creek, or Flat Creek watersheds, all of which contain 303(d) listed waters. Likewise, we suggest the applicant explore opportunities to restore, enhance or preserve the avoided reaches within the project area.

Monitoring

The applicant currently proposes to monitor for 8-years or until success criteria are met. EPA agrees with this monitoring schedule as long as appropriate performance standards are established and met post mining. However, it should be noted that the expected tree growth may not advance during the 8-year monitoring period to the point where it will qualify as a palustrine forested wetland. According to the National Wetlands Reports by the US Fish and Wildlife Service, forested wetlands experience the greatest decline of all wetland types. More importantly, forested wetlands are extremely difficult to restore or create. This is attributable to the slow nature of re-establishing these ecosystems. A longer period may be needed to determine if trees have grown to a substantial degree for the area to be classified as a palustrine forested wetland. We recommended performance standards for forested wetlands be explicitly laid out in the conditions of the permit. For example, in addition to the standards provided in the permit application, we also recommend that vegetation should be considered successful when more than 50% of the dominant species are composed of the species listed in the table titled

[2] 40 C.F.R. § 230.93(f)(2)

PFO1A and that there should be no more than 5% aerial cover of invasive species in any of the mitigation areas. We also recommend that performance standards detail the specific time frames for the establishment of these criteria (i.e. attainment of total % cover within a specified period of time for a designated canopy, sub canopy and understory species). The standards should detail the expected water regime (i.e. permanently ponded, seasonally inundated, seasonally saturated or a combination of these) and specify the required distance of protected buffers around the wetland.

As a part of the monitoring program for affected and reconstructed streams, EPA believes biological monitoring should be required to ensure there is no degradation to the communities that inhabit the streams. Biological monitoring, along with water chemistry and physical assessments, must occur prior to the initiation of mining activities to establish baseline conditions, during the mining activities to assist in determining potential impacts to aquatic habitat and water quality downstream of the impacts, and must continue at least five years after the completion of stream restoration and site reclamation activities at the mine site where appropriate to determine mitigation success.

Biological monitoring has been conducted onsite using the EPA RBP for wadeable streams and the Indiana mIBI and fIBI. However, there is no indication in the revised application that biological monitoring will be conducted during or post mining. Currently, the applicant proposes monitoring for water quality and habitat parameters (Rosgen Level III) following mitigation construction. We recommend that an appropriate level of biological sampling be conducted as well. This level of monitoring is necessary to ensure there is no degradation to the water quality or the communities that inhabit the streams. For all three points sampled, fIBI and mIBI scores were low, indicating a lack of species diversity in the streams as well as poor fish habitat. This is likely due to the previously-mined and unreclaimed headwaters of these streams. EPA recommends that the applicant demonstrate that appropriate biological communities are present in created streams through direct biological monitoring. Monitoring stations should be established at the downstream end of each created stream onsite (i.e. 1NS1 – 8NS1) as these reaches are proposed to be the main tributaries which will flow offsite and eventually feed into Flat or Prides Creeks. We request that the suite of monitoring requirements be included as conditions of the Corps permit as required under the 404(b)(1) Guidelines.[3] This is important for evaluating the cumulative impacts of mining in the project area and the success of stream reconstruction and mitigation, and determining if the project is meeting ecological performance standards.

Cumulative Impacts

The cumulative impacts analysis was revised to focus on the four 12-digit HUC watersheds where the area of this project is located: Headwaters Flat Creek (051202090501), Flat Creek – Patoka River (051202090605), Sugar Creek – Patoka River (051202090604), and Lick Creek – White River (051202021001)[4]. The applicant's cumulative impact analysis groups

[3] 40 C.F.R. § 230.11, 40 C.F.R. § 230.95

[4] Applicant had Stone Coe Creek – Patoka River as the name for HUC 12 – 051202090605, which is actually Flat Creek - Patoka. Stone Coe Creek is the name of the 10 digit HUC. This is based on data from the USDA Geospatial Data Gateway Watershed Boundary Dataset (WBD) (1:24,000 scale).

the four 12-digit HUC watersheds together and presents land use, source of impacts, pollutants and impairments as one collective watershed. This particular project site is unique in that approximately 75% of the permit area has been previously disturbed by mining activities (abandoned or reclaimed). Additionally, a large portion of each of the four watersheds has been or is currently being mined. According to the applicant, mining has impacted approximately 30% of the collective watershed. While EPA appreciates an assessment at this scale, there are a few remaining items that need to be addressed in the analysis.

Specific areas which still need to be addressed include the projected impacts posed by future mining projects by Solar Sources within each HUC coupled with current mining projects. Additional analysis should detail changes in hydrology, drainage patterns and channel composition, sediment transport, changes in discharge and retention rates and changes in runoff velocity and volume. To fully evaluate the cumulative impact, the applicant needs to provide a detailed discussion about past, present and future impacts to biology and water quality in these watersheds. Specific discussion should include how the applicant will demonstrate it will not cause or contribute to violations of State Water Quality Standards and further impairments to Sugar Creek, which is listed by the State of Indiana as impaired for dissolved oxygen, Total Dissolved Solids and sulfates. EPA has requested the Surface Mining Control Reclamation Act (SMCRA) Cumulative Impact Area report from the Corps to determine the scope of impact anticipated by this project and recommends the applicant also consider these impacts in the analysis. The applicant explicitly points out the effects of agriculture as a negative impact to the watershed. However, the post mining land use will be reverted to cropland. As such, the cumulative impacts analysis should include a discussion regarding potential impacts to downstream waters due to agriculture in the post mining landscape.

Contingency Plan

A contingency plan is a requirement under subpart J of the Guidelines.[5] EPA recommends the applicant develop a management strategy to address potential unforeseen changes in site conditions or other components of the mitigation design (i.e. additional plantings to be installed if survival rate drops below specified threshold, additional mitigation needed if stream biology or habitat decline, invasive species control measure implementation based on the presence of reed canary grass). This strategy should also include the actions regarding timing-specific conditions detailed in Solar Sources' response letter. Inclusion of such specifics in the contingency plan will increase the overall chances of success during reclamation. General corrective actions to be initiated may also include: revisions to the material handling plans, revisions to storm water storage, additional grading and vegetation of reclaimed areas, addition of pretreatment ponds, and internal storm water diversion. The strategy should also discuss how the applicant would address sediment basin failure, lack of hydrology in streams and wetlands, failure of BMPs, and significant deer browse.

Financial Assurances

[5] 40 C.F.R. § 230.97(c)

Financial assurances are required under the Guidelines to address mitigation deficiencies and ensure mitigation success.[6] The Guidelines state that "financial assurances may be in the form of performance bonds, escrow accounts, casualty insurances, letters of credit, legislative appropriations for government sponsored projects, or other appropriate instruments[7]". Significant financial assurances will be required due to the experimental nature of wetland and stream creation on previously mined lands. Financial assurances for compensatory wetland and stream mitigation for 404 purposes are separate and distinct from those required by the Surface Mining Control and Reclamation Act (SMCRA)[8]. As such, EPA continues to request that the financial assurances be established before the 404 permit is issued and include specific details on the dollar amount, type(s) of assurance, release conditions, and be made payable to a designee of the Corps or a standby trust agreement.

Environmental Justice

The U.S. Environmental Protection Agency is committed to protecting human health and the environment for everyone and ensuring that all people are treated fairly and given the opportunity to participate meaningfully in EPA's decision-making process. In addressing the existing statutory provisions set forth under Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," (February 11, 1994)[9] we continue to focus our attention on the adverse environmental and human health effects of federal actions on minority and low-income communities with the goal of achieving environmental protection as well as promoting nondiscrimination in federal programs affecting human health and the environment.

An EPA assessment tool which incorporates environmental, human health, compliance and social demographics metrics revealed that a majority of the proposed Charger Mine site is located within a potential environmental justice area of concern. E.O. 12898 directs all federal agencies to conduct programs, policies, and activities in a manner that ensures (1) communities in and around the proposed site are not being subject to disproportionately high and adverse human health or environmental impacts and (2) such activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin. EPA recommends that the Corps consider designating the proposed mine site an Environmental Justice area of concern prior to a permit decision and take steps to avoid any adverse human health or environmental effects this mine may have on minority populations and low-income populations. We recommend the Corps examine potential impacts such as contamination of drinking water supplies, impacts on fish and wildlife, air quality and noise impacts from the proposed project.

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[6] 40 CFR 230.93(n)/33 CFR 332.3(n)
[7] 40 C.F.R. §230.93(n)(2)
[8] 40 C.F.R. 230.93(n)
[9] http://www.epa.gov/fedreg/eo/eo12898.htm

We appreciate that Solar Sources has addressed some of our comments, however, there are still a number of important unresolved issues that must be addressed. EPA continues to object to the issuance of a permit for the project as proposed as it fails to meet the Guidelines.

EPA believes that this site would benefit from reclamation of abandoned mine lands onsite and looks forward to working with the Corps and the applicant to resolve EPAs concerns with the proposed project. EPA believes that the inclusion of our recommendations will ensure successful mitigation after appropriate avoidance and minimization measures have been implemented on the newly proposed area. Please notify us of Solar Sources' response to these comments and any changes to the permit application. We appreciate the opportunity to provide additional comments on this project. Please contact Kerryann Weaver (312-353-9483) if you have any questions.

Sincerely,

Peter Swenson, Chief
Watersheds and Wetlands Branch

cc: Marylou Poppa Renshaw, Chief
Watershed Planning Branch
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Scott Pruit, Field Supervisor
Bloomington Ecological Services Field Office
U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, Indiana 47403